

## CLAIMS

1. Edible chewable object for pets, this object (1) being elongated and composed of a chewable, edible and digestive matrix, characterised in that the shape of the object (1) includes at least two dihedrons ( $d_1$ ,  $d_2$ ), the edges ( $a_1$ ,  $a_2$ ) of which extend approximately along the entire length of the object, and in that the composition of the matrix contains at least one active constituent, being a chemical or biological agent with either a local or systemic therapeutic, remedial or preventive activity, or an anti-tartar activity acting against caries, dental plaque, calcareous deposits, or an activity reinforcing the dental structure, and in that the composition of the matrix is between 0.01 and 5% by weight of the matrix.

2. Chewable object according to claim 1, characterised in that the edges ( $a_1$ ,  $a_2$ ) of the dihedrons ( $d_1$ ,  $d_2$ ) are approximately straight, or concave or convex.

3. Chewable object according to claim 1 or 2, characterised in that the edges ( $a_1$ ,  $a_2$ ) of the dihedrons ( $d_1$ ,  $d_2$ ) are rounded.

4. Chewable object according to one of the previous claims, characterised in that the dihedrons ( $d_1$ ,  $d_2$ ) form an angle  $\alpha$  of between  $0.5^\circ$  and  $70^\circ$ , and preferably between  $10^\circ$  and  $50^\circ$ .

5. Chewable object according to one of the previous claims, characterised in that the object (1) has a polygonal shaped cross section with  $n$  projecting angles ( $\alpha$ ) to form  $n$  edges.

6. Chewable object according to one of claims 1 to 4, characterised in that it has the shape of a diabolo with a central part (3) and two end parts (5) each of which has a cross section with two projecting angles ( $\alpha$ ) to form two edges  $a_1$  and  $a_2$ .

7. Chewable object according to one of claims 1 to 4, characterised in that the chewable object (1) has a globally S shaped cross section with a central part (3) and two end parts (5) that project on each side of the central part (3), each end part having at least two projecting angles ( $\alpha$ ) in the cross section, to form at least two edges ( $a_1$  and  $a_2$ ).

8. Chewable object according to one of claims 1 to 4, characterised in that the chewable object (1) has a globally V-shaped cross section with two dihedrons ( $d_1$  and  $d_2$ ) that define three edges ( $a_1$ ,  $a_2$ ,  $a_3$ ).

9. Chewable object according to one of claims 1 to 4, characterised in that the chewable object (1) has a globally W-shaped cross section with four dihedrons ( $d_1$ ,  $d_2$ ,  $d_3$ ,  $d_4$ ) that define five longitudinal edges ( $a_1$ ,  $a_2$ ,  $a_3$ ,  $a_4$ ,  $a_5$ ).

10. Chewable object according to one of claims 1 to 4, characterised in that the chewable object has a globally diamond-shaped cross section with two projecting angles ( $\alpha$ ) to form two edges ( $a_1$ ,  $a_2$ ).

11. Chewable object according to one of the previous claims, characterised in that the content of active constituents in the composition of the matrix does not exceed 10%.

12. Chewable object according to one of the previous claims, characterised in that the composition of the matrix contains 2 to 5 active constituents.

13. Edible, chewable object according to one of the previous claims, characterised in that the active constituent(s) is (are) chosen from among fluorine salts such as sodium fluoride, sodium monofluorate, tin fluoride alone or mixed, inorganic pyrophosphates of mono or divalent alkaline metals (Na, K, Li, Ca, Mg, etc.) with formulas  $M_{n+2}P_nO_{3n+1}$  where M is a monovalent metal or  $M'_nP_nO_{3n+1}$  where M' is a divalent metal, such as tetrasodium pyrophosphate, tetrapotassium pyrophosphate, sodium acid pyrophosphate, calcium pyrophosphate, anti-microbials and / or anti-fungals and / or antiseptics such as chlorhexidine or its salts, bromochlorophene, triclosan, benzalkonium chloride, chlorobutanol, cetylpyridinium chloride, benzoic acid salts such as sodium benzoate, zinc diglyconate, potassium thiocyanate, vitamin C and its salts and particularly zinc ascorbate, citric acid and its salts, oxidoreductases such as glucose oxidase, galacto oxidase, lactoperoxidase, glycollate oxidase, lactate oxidase, L-gluconolactone oxidase, L-2hydroxyacide oxidase, aldehyde oxidase, xanthine oxidase, D-aspartate oxidase, L-amino acid oxidase, D-amino acid oxidase, monoamine oxidase, pyridoxaminephosphate oxidase, diamine oxidase, sulphite oxidase, and each of these oxidoreductases may be associated with a specific substrate such as glucose for glucose oxidase, such as D-glucose, D-galactose, L-sorbose, ethanol, tyramine, 1,4-diaminobutane, 6-

hydroxy-L-nicotine, 6-hydroxy-D-nicotine, 2-aminophenol, glycollate, L-lactate, 2-deoxy-D-Glucose, L-gluconolactone, L-galactolactone, D-mannonolactone, L-2hydroxyisocaproate, acetaldehyde, butyraldehyde, xanthine, D-aspartate, D-glutamate, L-aminoacids and D-aminoacids, enzymes such as lysozyme, lactoferrine, remineralising agents, tooth bleaching substances such as TC45 / Bioglass®, natural or modified polysaccharides such as chitin, chitosan and its derivatives.

14. Chewable object according to one of the previous claims, characterised in that the composition of the matrix contains at least one abrasive agent.

15. Chewable object according to claim 14, characterised in that the abrasive agent is chosen from among silica derivatives such as hydrated silica, zirconium silicate, aluminium silicate or magnesium trisilicate; calcium carbonate; sodium bicarbonate; phosphate derivatives such as calcium dihydrogen phosphate ( $\text{Ca}(\text{H}_2\text{PO}_4)_2$ ), calcium monohydrogen phosphate ( $\text{CaHPO}_4$ ), magnesium - ammonium phosphate ( $\text{MgNH}_4\text{PO}_4$ ) or calcium pyrophosphate ( $\text{Ca}_2\text{P}_2\text{O}_7$ ); an alumina such as alumina trihydrate; pumice stone powder, finely ground marine limestone, bone powder.

16. Edible chewable object according to one of the previous claims, characterised in that the composition of the matrix comprises at least one flavour, and / or at least one tasting agent, and /or at least one wetting agent and /or at least one preservation agent.

17. Edible chewable object according to one of the previous claims, characterised in that it is produced by extrusion or by moulding or by extrusion - moulding.

18. Use of a chewable object according to one of the previous claims, for prevention and / or treatment of gingivitis and / or parodontitis of pets.

19. Use of a chewable object according to one of the previous claims, for the prevention and / or treatment of tartar deposits in the oral cavity of pets.

20. Method for achieving hygiene in the oral cavity and teeth of a carnivorous pet, using an elongated chewable, edible and digestible object that the pet can easily grip, method characterised in that it consists of:

- in a first step, improving contact between the object and the teeth of the pet due to the presence of edges that extend around practically the entire length of the object and the presence of components or abrasive agents contained in the matrix of the object, for mechanical cleaning of the teeth of the pet both on the surfaces and in interstices and / or cavities;

- in a second step, bringing the active constituents contained in the matrix of the object into contact with the cleaned teeth;

- in a third step, causing softening of the edges of the object that then act as a scraper with a flexible apron, after hydratation of the object by the pet's saliva; and

- in a fourth step, releasing all active constituents to bring them into contact with the pet's

complete oral cavity by the combined action of chewing the object that causes its disintegration and the presence of abundant saliva.

21. Method according to claim 20, characterised in that it consists of adapting the hardness of the matrix of the object as a function of the pet considered, choosing a hardness such that firstly the object (and particularly its edges) is sufficiently hard so that it is not crushed or fragmented when the pet begins to chew the object, and secondly to obtain progressive softening of the edges such that the abrasive effect on the teeth is sufficient, and to choose a hardness such that the object can be disintegrated under the effect of chewing, and assimilated by the pet.